



**Summit County Public Health
Influenza Surveillance Report
2018 – 2019 Season**



Public Health
Prevent. Promote. Protect.

Report #26

Flu Surveillance Week 27 (4/7 to 4/13/2019)

Centers for Disease Control and Prevention MMWR Week 15

Summit County Surveillance Data:

During **Week 27**, influenza-related activity in Summit County *continued to decrease*.

Table 1: Overall Influenza Activity Indicators in Summit County by Week				
	Week 26 MMWR 14 N (%)¹	Week 27 MMWR 15 N (%)¹	Percent change from previous week	Number of weeks increasing or decreasing
Lab Reports				
Test Performed	861	654	- 24.0%	↓5
Positive Tests (Number and %)	141 (16.4)	80 (12.2)	- 25.6%	↓5
Influenza A (Number and %)	138 (16.0)	74 (11.3)	- 29.4%	↓5
Influenza B (Number and %)	3 (0.4)	6 (0.9)	+ 125%	↑2
Influenza hospitalizations:	29	16	- 44.8%	↓2
Influenza ILI Community Report:				
Long-term Care Facilities	0	0	--	--
Correctional & Addiction Facilities	0	0	--	--
Physician Offices & Clinics	16	9	- 43.8%	↓1
Pharmacy Prescriptions				
Amantidine	0	1	+ 100%	↑1
Rimantidine Flumadine	0	0	--	--
Relenza	0	0	--	--
Oseltamivir Tamiflu	26	9	- 65.4%	↓5
<i>Total antiviral prescriptions</i>	26	10	- 61.5%	↓5
Schools absenteeism daily rate²	5.6	5.6	NC	NC
Deaths				
Pneumonia associated	10 (7.2)	2 (1.6)	- 78.1%	↓2
Influenza associated	3	1	- 66.7%	↓1
Emergency room visits (EpiCenter)³				
Constitutional Complaints	520 (8.9)	522 (8.5)	- 4.5%	↓4
Fever and ILI	86 (1.5)	75 (1.2)	- 20.0%	↓2
1) N and % are reported when available; NC = no change				
2) Absence is for any reason. Percent is from total number of students enrolled. Data was collected from 8 schools or school districts throughout Summit County (n = ~37,000 students)				
3) Percent is from total number of emergency room interactions				
Note: Data is provisional and may be updated as more information is received. Percentages should be interpreted with caution. Small changes in number can result in large changes in percent. When a percentage, or prevalence, is available in this table, the percent change will be calculated from those values				

One influenza-related deaths was reported during Week 27, increasing the season total to 13. There were 2 deaths associated with pneumonia reported in Week 27. **Figure 1** displays weekly Summit County death counts associated with pneumonia and flu.

Acute Care Hospitalizations: There were 16 flu-related hospitalizations, a 44.8% decrease from Week 26. (**Figure 2**)

COMMUNITY ILI REPORTS:

Influenza like Illness (ILI) as defined by the CDC is fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza.

Long Term Care Facilities: There were no cases of ILI reported.

Correctional and Inpatient Addiction facilities: There were 0 cases of ILI reported.

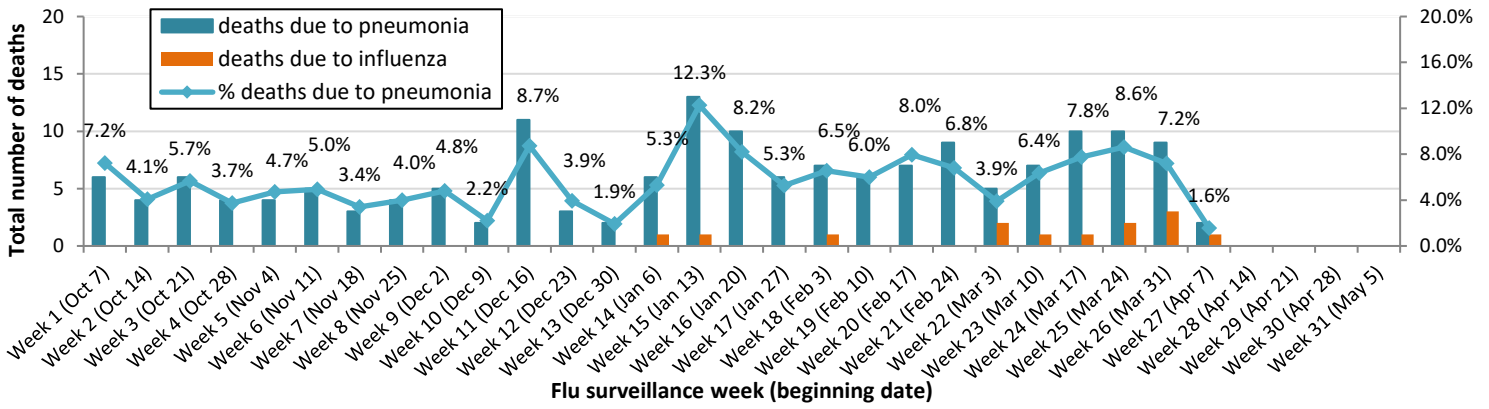
Physician offices and clinics: During Week 27, there were 9 cases of ILI reported.

Pharmacies: 10 Prescriptions for antiviral medications were dispensed by reporting pharmacies during Week 27.

School absenteeism includes absences regardless of reason. During Week 27, area schools reported an average daily absence rate of 5.6%, no change from the Week 26 rate.

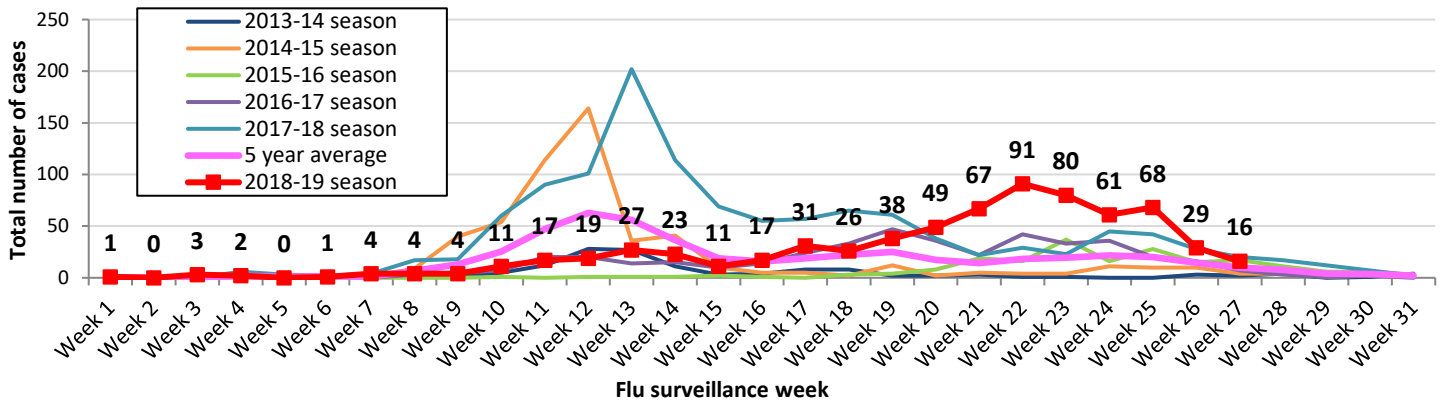
Lab reports: During Week 27, Summit County labs performed 654 influenza tests, of which 80 tested positive (74 Type A, 6 Type B). (**Figure 4**) The percentage of positive test results decreased by 25.6% since Week 26.

Figure 1. Weekly Summit County death counts associated with pneumonia and influenza during 2018-2019 season



Influenza-associated hospitalizations: Summit County hospitals reported 16 influenza-associated hospitalizations in Week 27. **Figure 2** displays weekly confirmed hospitalization counts for Summit County (season count to date = 700).

Figure 2. Summit County influenza-associated hospitalizations by week, 2018-2019 and previous five seasons



EpiCenter collects and analyzes health related data in real time to provide information about the health of the community. This system tracks ER visits related to constitutional complaints and fever and ILI. **Figure 3** displays the weekly number of ER visits related to ILI and flu symptoms in Summit County. There were 75 ILI-related visits reported during Week 27, which was 1.2% of total ED visits (n = 6,173). This rate was 20% lower than the Week 26 rate.

Figure 3. Weekly ER visits in Summit County related to Fever + ILI stratified by age groups, 2018 to 2019 season

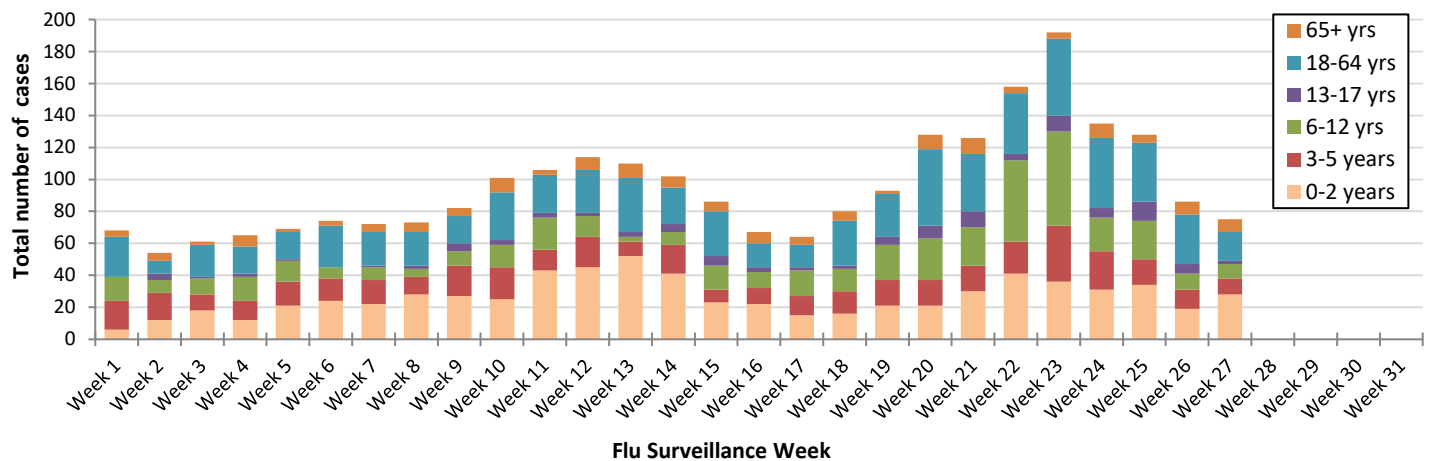
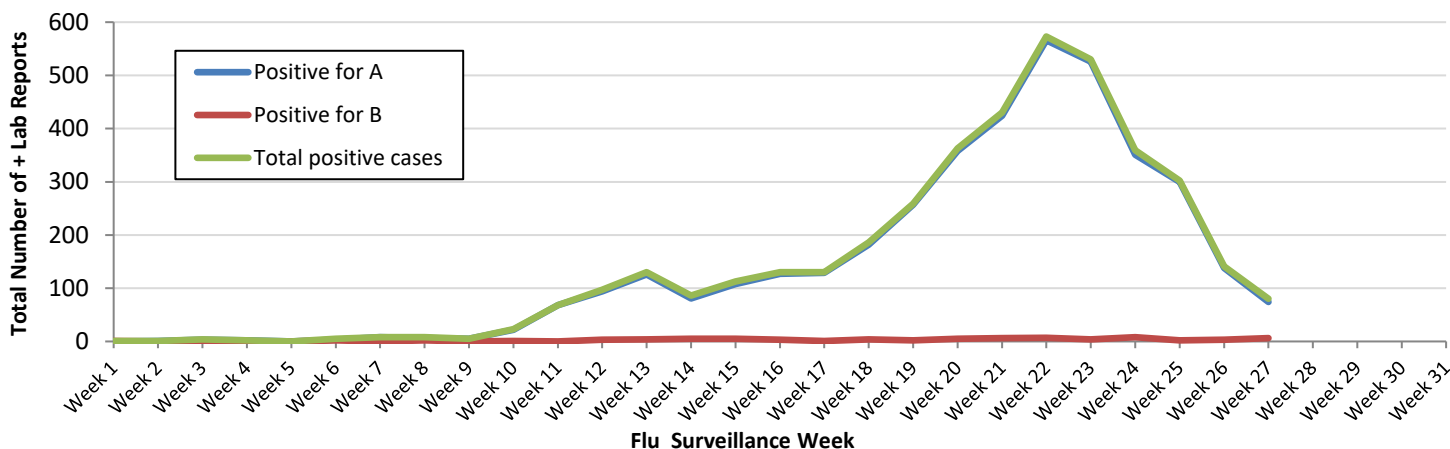


Figure 4. Influenza diagnostic tests with positive results completed by Summit County health facilities, 2018 - 2019 season



Ohio Influenza Activity:

Current Ohio Activity Level (Geographic Spread) – Widespread Definition: Increased ILI in at least half of the regions AND recent (within the past 3 weeks) lab confirmed influenza in the state.

During MMWR Week 15, public health surveillance data sources indicate Minimal intensity for influenza-like illness (ILI) in outpatient settings reported by Ohio’s sentinel providers. The percentage of emergency department visits with patients exhibiting constitutional symptoms and fever and ILI specified ED visits **decreased** but are still above baseline levels. Reported cases of influenza-associated hospitalizations are **above** the seasonal threshold*. There were 386 influenza-associated hospitalizations reported during MMWR Week 15.

Ohio Influenza Activity Summary Dashboard (March 7 – April 13, 2019):

Data Source	Current week value	Percent Change from last week ¹	# of weeks ²	Trend Chart ³
Influenza-like Illness (ILI) Outpatient Data (ILINet Sentinel Provider Visits)	1.55%	-24.02%	↓ 3	
Thermometer Sales (National Retail Data Monitor)	1263	-22.56%	↓ 5	
Fever and ILI Specified ED Visits (EpiCenter)	1.85%	-11.48%	↓ 5	
Constitutional ED Visits (EpiCenter)	9.25%	-10.37%	↓ 5	
Confirmed Influenza-associated Hospitalizations (Ohio Disease Reporting System)	386	-33.33%	↓ 3	
Outpatient Medical Claims Data ⁴	0.99%	-50.25%	↓ 5	

¹Interpret percent changes with caution. Large variability may be exhibited in data sources with low weekly values.

²Number of weeks that the % change is increasing or decreasing.

³Black lines represent current week's data; red lines represent baseline averages

⁴Medical Claims Data provided by athenahealth®

Ohio Surveillance Data:

- **ODH lab** has reported 1280 **positive** influenza tests from specimens sent from various submitters. 2018-2019 influenza season positive results: **(656) A/pdmH1N1; (617) A/H3N2; (7) Influenza B**; (through 4/13/2019).
- The **National Respiratory and Enteric Virus Surveillance System (NREVSS)** has reported **71,397** influenza tests performed at participating facilities. 2018-2019 influenza season positive results: **(427) A/pdmH1N1, (546) A/H3N2, (11,826) Flu A Not Subtyped, and (254) Flu B** (through 4/13/2019).
- **4 pediatric influenza-associated mortalities** have been reported during the 2018-2019 season (through 4/13/2019).
- No **novel influenza A virus infections** have been reported during the 2018-2019 season (through 4/13/2019).
- Incidence of confirmed **influenza-associated hospitalizations** in 2018-2019 season = 9469 (through 4/13/2019).

Source: <https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/seasonal-influenza/ohio-flu-activity/>

National Influenza Activity:

Influenza activity continues to decrease in the United States, but remains elevated. Influenza A(H1N1)pdm09 viruses predominated from October to mid-February, and influenza A(H3N2) viruses have been more commonly identified since late February. Small numbers of influenza B viruses also have been reported. Below is a summary of the key influenza indicators for the week ending April 13, 2019:

- **Viral Surveillance:** The percentage of respiratory specimens testing positive for influenza viruses in clinical laboratories decreased. During the most recent three weeks, influenza A(H3) viruses were reported more frequently than influenza A(H1N1)pdm09 viruses nationally, and in all 10 HHS Regions.
 - **Virus Characterization:** The majority of influenza A(H1N1)pdm09 and influenza B viruses characterized antigenically are similar to the cell-grown reference viruses representing the 2018–2019 Northern Hemisphere influenza vaccine viruses. However, the majority of influenza A(H3N2) viruses are antigenically distinguishable from A/Singapore/INFIMH-16-0019/2016 (3C.2a1), a cell-propagated reference virus representing the A(H3N2) component of 2018-19 Northern Hemisphere influenza vaccines.
 - **Antiviral Resistance:** The vast majority of influenza viruses tested (>99%) show susceptibility to oseltamivir and peramivir. All influenza viruses tested showed susceptibility to zanamivir.
- **Influenza-like Illness Surveillance (Figure 5):** The proportion of outpatient visits for influenza-like illness (ILI) decreased to 2.4%, but remains above the national baseline of 2.2%. Seven of 10 regions reported ILI at or above their region-specific baseline level.
 - **ILI State Activity Indicator Map (Figure 6):** One state experienced high ILI activity; five states experienced moderate ILI activity; New York City, Puerto Rico and 14 states experienced low ILI activity; the District of Columbia and 30 states experienced minimal ILI activity; and the U.S. Virgin Islands had insufficient data.
- **Geographic Spread of Influenza (Figure 7):** The geographic spread of influenza in 11 states was reported as widespread; Puerto Rico and 20 states reported regional activity; the District of Columbia and 17 states reported local activity; the U.S. Virgin Islands and two states reported sporadic activity; Guam did not report.
- **Influenza-associated Hospitalizations:** A cumulative rate of 62.3 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported. The highest hospitalization rate is among adults 65 years and older (206.5 hospitalizations per 100,000 population).
- **Pneumonia and Influenza Mortality:** The proportion of deaths attributed to pneumonia and influenza (P&I) was below the system-specific epidemic threshold in the National Center for Health Statistics (NCHS) Mortality Surveillance System.
- **Influenza-associated Pediatric Deaths:** Five influenza-associated pediatric deaths were reported to CDC during week 15.

Figure 5. Percentage of visits for influenza-like illness (ILI) reported by the U.S. Outpatient Influenza-like Surveillance Network (ILINet), weekly national summary, 2018-2019 and selected previous seasons

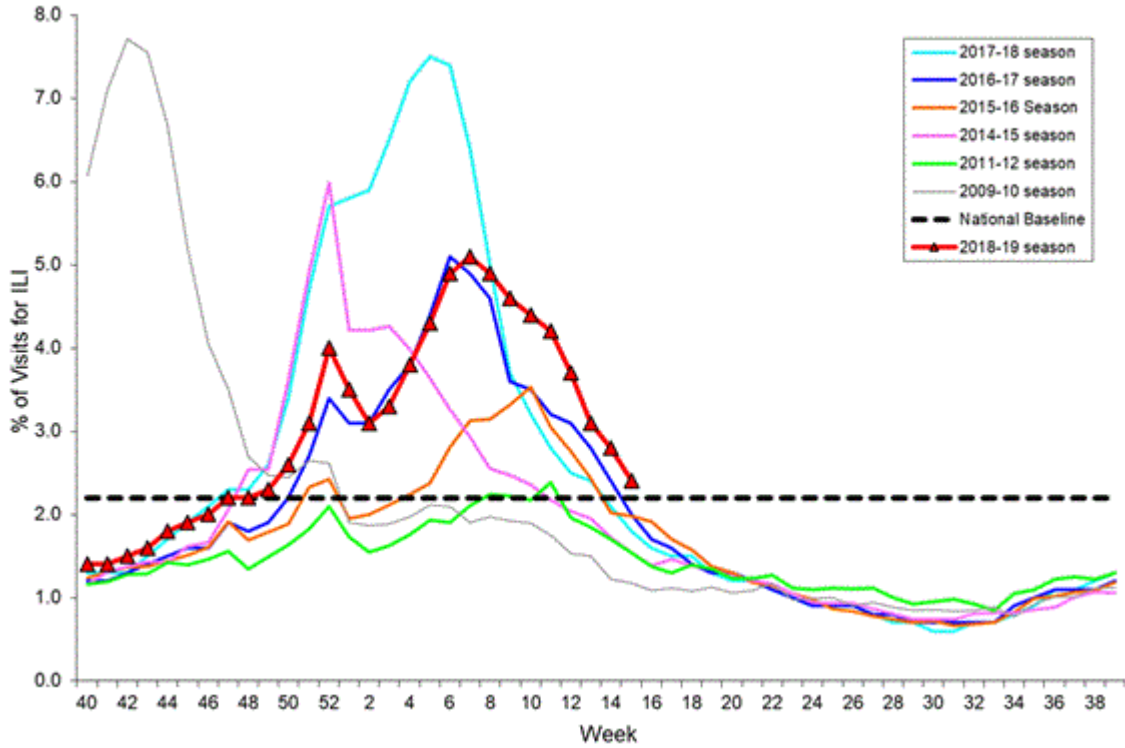


Figure 6. Influenza-like illness (ILI) activity level indicator determined by data reported to ILINet

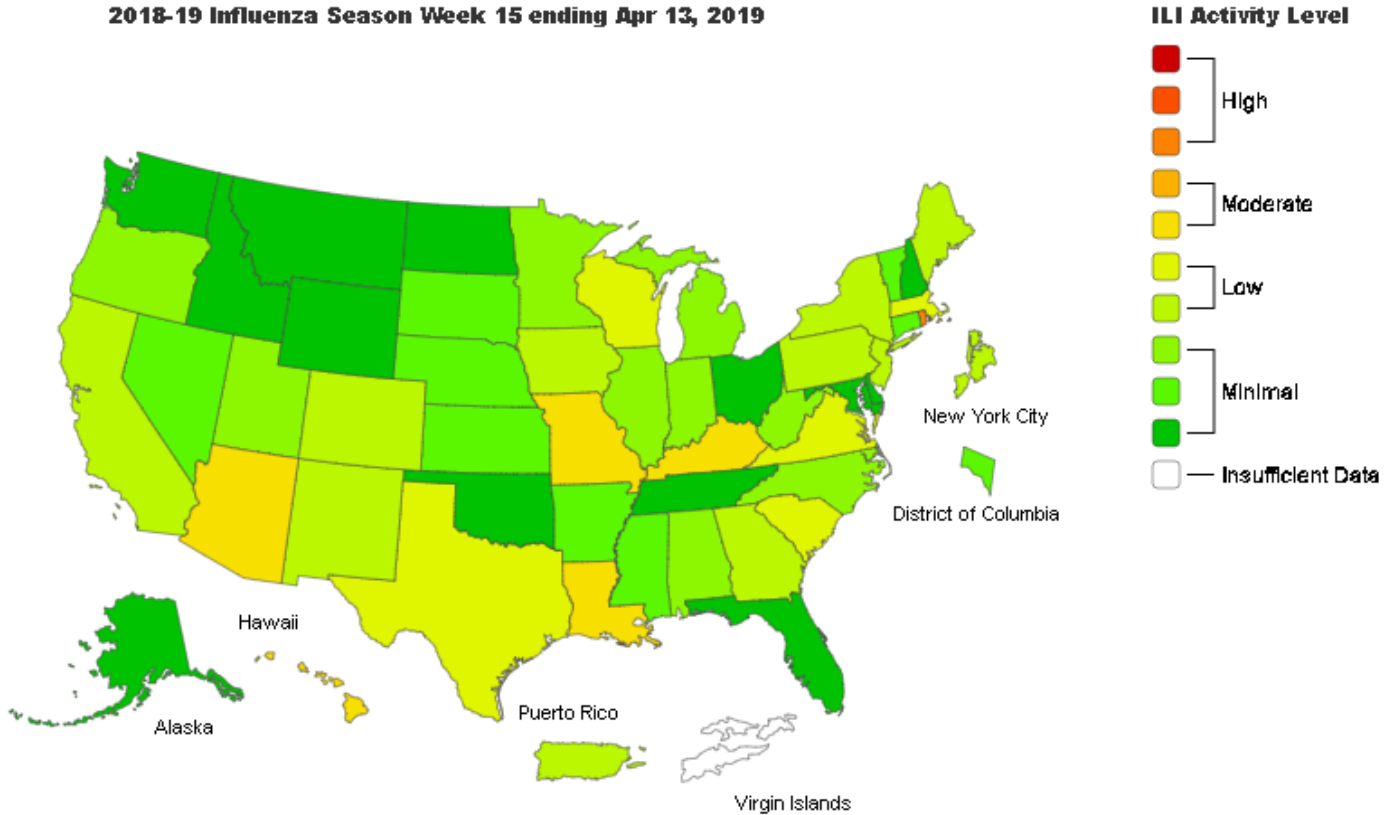
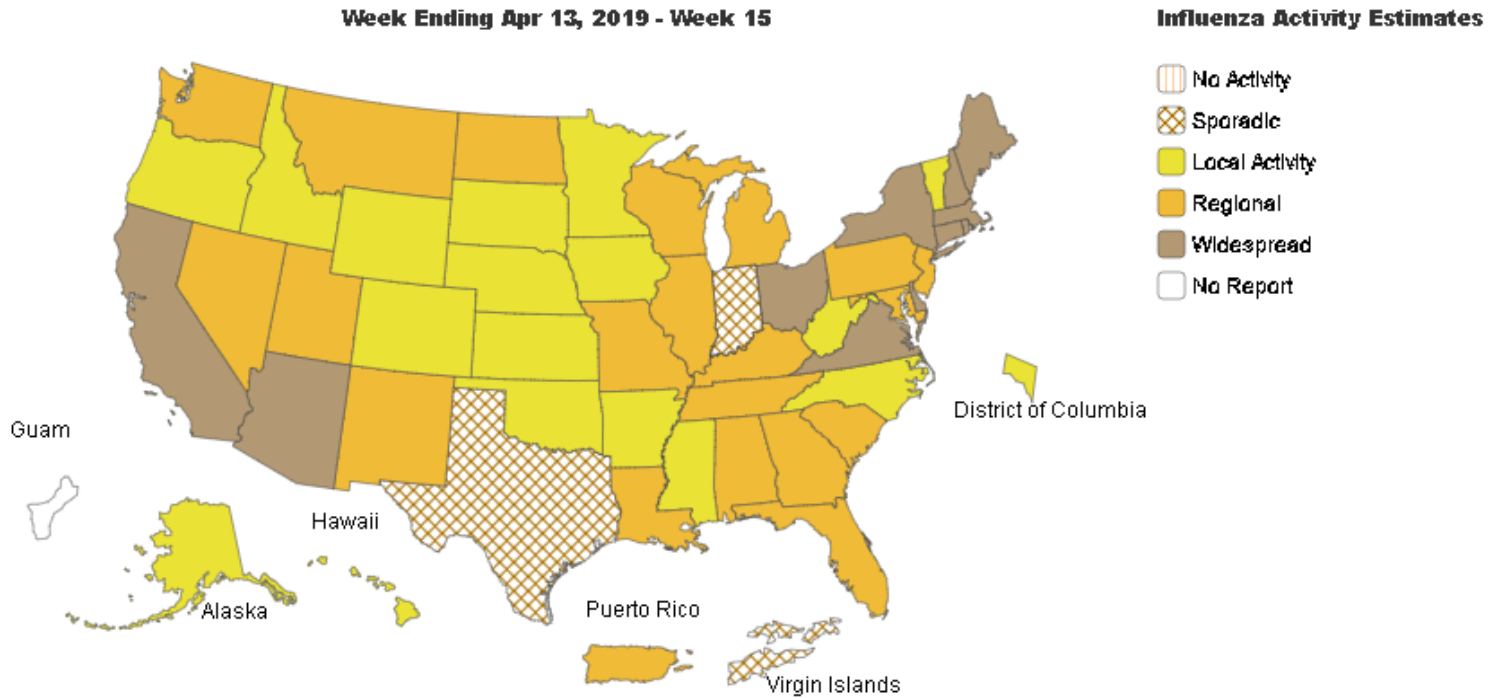


Figure 7. Weekly influenza activity (geographic spread) estimates reported by state and territorial epidemiologists



Source: <https://www.cdc.gov/flu/weekly/>

Global Surveillance:

Influenza Update N° 339, World Health Organization (WHO), published 15 April 2019, based on data up to 31 March 2019. The Update is published every two weeks.

Summary:

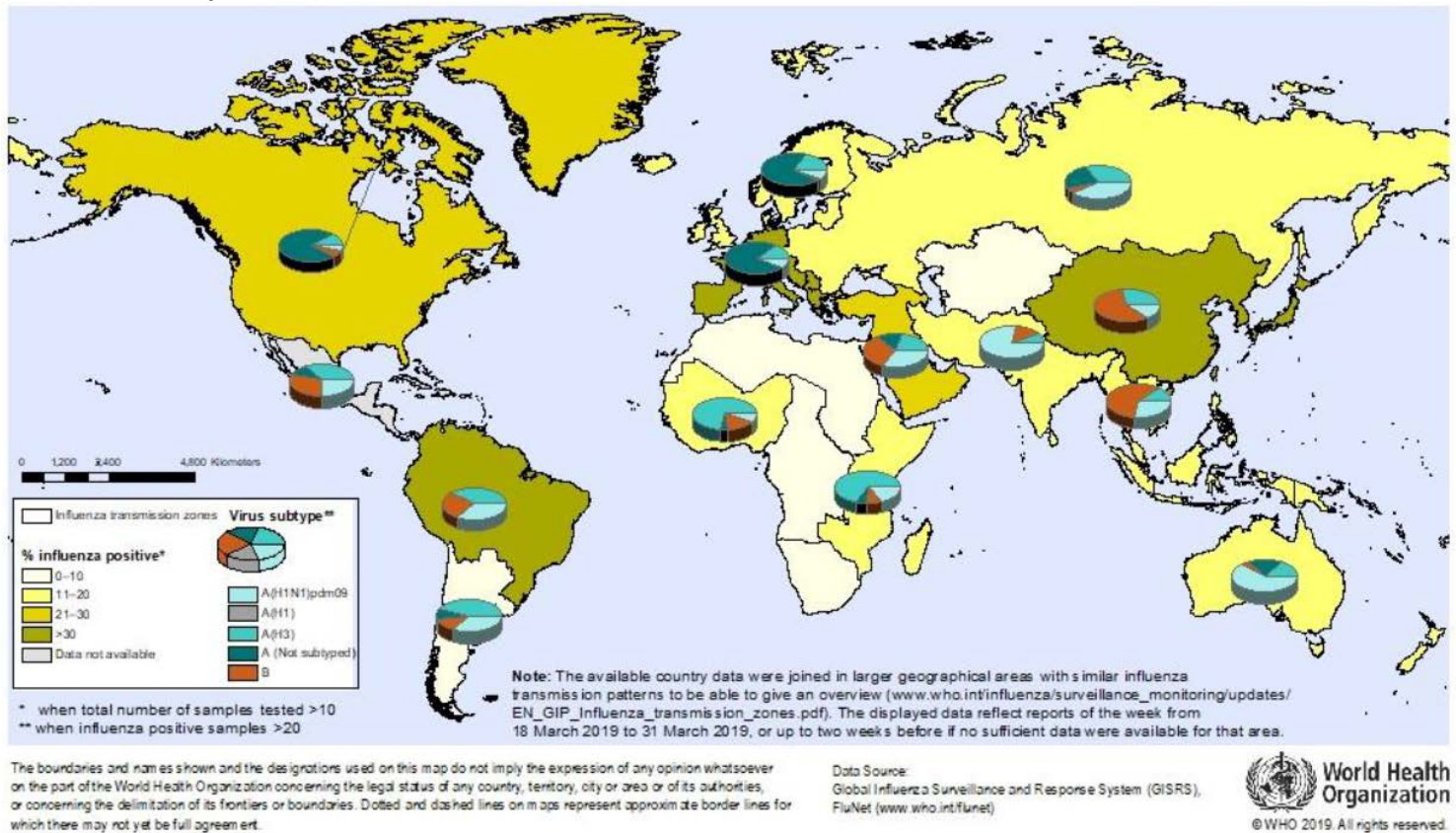
Worldwide, seasonal influenza A viruses accounted for the majority of detections.

In the temperate zone of the northern hemisphere influenza activity decreased overall.

- In **North America**, influenza activity appeared to decrease with influenza A(H3N2) the dominant virus, followed by influenza A(H1N1)pdm09.
- In **Europe**, influenza activity decreased across the continent. Both influenza A viruses co-circulated; influenza A(H3N2) was the most frequently identified subtype.
- In **North Africa**, influenza detections were low across reporting countries.
- In **Western Asia**, influenza activity appeared to decrease overall, with exception of Saudi Arabia where activity remained elevated.
- In **East Asia**, although decreased influenza activity continued to be reported. Influenza B was the most frequently detected virus followed by influenza A(H3N2).

National Influenza Centres (NICs) and other national influenza laboratories from 125 countries, areas or territories reported data to FluNet for the time period from 18 March 2019 to 31 March 2019 (data as of 2019-04-12 03:15:47 UTC). The WHO GISRS laboratories tested more than 139623 specimens during that time period. 30960 were positive for influenza viruses, of which 25464 (82.2%) were typed as influenza A and 5496 (17.8%) as influenza B. Of the sub-typed influenza A viruses, 4189 (40.6%) were influenza A(H1N1)pdm09 and 6139 (59.4%) were influenza A(H3N2). Of the characterized B viruses, 154 (3.8%) belonged to the B-Yamagata lineage and 3919 (96.2%) to the B-Victoria lineage.

Figure 8. Percentage of respiratory specimens that tested positive for influenza, by influenza transmission zone (status as of 12 April 2019)



Source: https://www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/

Influenza News from CIDRAP (Center for Infectious Disease Research and Policy):

Study highlights higher impact of H1N1 on younger children

Written by: Lisa Schnirring | News Editor | CIDRAP News | Apr 12, 2019

The 2009 H1N1 virus has been the dominant flu strain in the Northern Hemisphere this season, and surveillance systems in Canada reported that children were more affected by the virus than other age-groups have been. For the study, researchers from British Columbia, Quebec, Ontario, Alberta, and Manitoba examined age distribution of the 2009 H1N1 cases this season compared with past flu seasons, and they compared unvaccinated people against test-negative controls.

Findings across the different flu seasons showed that children younger than 10 made up a greater proportion of outpatient visits this season, especially kids ages 5 to 9 years old, who made up 14% of cases, twice that for earlier 2009 H1N1–dominant years in the 2013–14 and 2015–16 flu seasons.

Danuta Skowronski, MD, the study's first author, who is with the British Columbia Centre for Disease Control and the University of British Columbia in Vancouver, said the paper, as expected, shows that school-age children (ages 5 to 19) were overrepresented in earlier H3N2 epidemics. However, younger school-aged kids (ages 5 to 9) hadn't been overrepresented in earlier 2009 H1N1 epidemics.

She said for the first time this season, the younger school-aged group is fully made up of kids who weren't yet born during the 2009 H1N1 pandemic, missing out on high infection rates that conferred pandemic-related immunity. Skowronski notes, in contrast, that preteens and teens— who have greater social contacts than their younger peers and were alive during the pandemic years—have been underrepresented across all 2009 H1N1 dominant seasons since then.

The authors wrote that, besides kids their own age, younger school-age kids have contacts with siblings and parents that tend to be longer duration, creating richer contact networks that may have amplified spread beyond their peers.

So far, it's not clear if flu attack rates this season were enough to reduce the susceptibility in this "moving cohort" of children who weren't alive during the 2009 H1N1 pandemic, the authors note. "If not, that susceptibility may next extend to include those older than 10 years who have, on average, the greatest number of effective contacts, a potentially precarious combination for future A(H1N1)pdm09 epidemics."

Skowronski said immunologic cohort effects related to major priming events such as pandemics need to be followed in this way to anticipate age-related vulnerability during ensuing flu seasons.

Apr 11 Eurosurveill [report](#)

Source: <http://www.cidrap.umn.edu/news-perspective/2019/04/us-flu-still-elevated-study-finds-higher-impact-young-kids>

Enesi and BARDA partner on needle-free flu vaccines

Enesi Pharma, a biotechnology company based in the United Kingdom, announced yesterday that it has partnered with the US Department of Health and Human Services Biomedical Advanced Research and Development Authority (BARDA) to develop new flu vaccines using its Implavax technology.

Implavax is a novel formulation and needle-free device that allows solid-dose vaccine to be delivered quickly under the skin. The goal is for health providers or even patients to administer vaccine disease using the simple reusable needle-free device. The company said the system has the potential to boost immune responses to vaccination and cut storage and distribution costs.

The project is part of BARDA's DRiVE (Division of Research, Innovation) initiative, which seeks and funds bold innovative solutions to transform health security, with an eye toward improving vaccine uptake, coverage, compliance, and preparedness. It will involve evaluating solid-dose formulations of marketed flu vaccines, along with in vitro tests to confirm titer generation, mechanical strength, and surety of implantation.

In vivo tests will compare efficacy and dosing regimens, including a comparison of solid-dose implants with placebo and vaccine administered by syringe.

Apr 15 Enesi Pharma [press release](#)

Source: <http://www.cidrap.umn.edu/news-perspective/2019/04/news-scan-apr-16-2019>

About this report: Reporting agencies include labs, hospitals, long-term care and community-based care providers, physician offices, university clinic, pharmacies, and schools. Agencies are distributed throughout Summit County and report different indicators of flu activity including total lab tests, numbers of positive tests and type, antiviral prescriptions filled, school absences, and influenza like illness (ILI). Hospitalizations are lab confirmed for influenza and are obtained from the Ohio Disease Reporting System. Number of deaths associated with influenza and pneumonia are gathered from the Summit County Office of Vital Records death listings. Emergency room visits for complaints related to influenza are obtained by syndromic surveillance system (Epicenter).
Special thanks to all agencies who report Influenza related data weekly.

Reporting from participants may not be complete each week. Numbers may change as updated reports are received. For questions, please contact Joan Hall or Tracy Rodriguez at the Summit County Public Health Communicable Disease Unit (330) 375-2662 or cdu@schd.org. This report was issued on April 19, 2019.